

WHAT IS CLAIMED IS:

1. A method of inducing an immune response in a bird against *Campylobacter*,
comprising administering, *in ovo*, during the final quarter of incubation, an immunizing
5 effective amount of live cells of a *Campylobacter* species.
2. The method of claim 1, wherein said bird is a domesticated bird.
3. The method of claim 2, wherein said domesticated bird is selected from the group
10 consisting of a chicken, a turkey, and a duck.
4. The method of claim 1, wherein said species of *Campylobacter* used in the
administration is selected from the group consisting of *C. jejuni*, *C. coli*, and *C. lari*.
- 15 5. The method of claim 1, wherein the live cells used in the administration comprise live
cells of more than one species of *Campylobacter*.
6. The method of claim 1, wherein the live cells are wild type or have been modified
genetically.
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7. The method of claim 6, wherein a heterologous polynucleotide sequence has been
introduced into the live cells of *Campylobacter*.
8. The method of claim 7, wherein said heterologous polynucleotide sequence encodes a
25 protein essential in colonization of domesticated birds by *Campylobacter*.
9. The method of claim 7, wherein said heterologous polynucleotide sequence encodes
an antigen from a virus, bacteria, or parasite that causes disease in a domesticated
bird.
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10. The method of claim 7, wherein said heterologous polynucleotide sequence encodes
an antigen from an organism that causes food-borne illness in humans.
11. The method of claim 7, wherein said heterologous polynucleotide sequence encodes a
35 protein that enhances the growth or feed efficiency of a domesticated bird.
12. The method of claim 7, wherein said heterologous polynucleotide sequence encodes a
protein that stimulates the birds' immune system.

13. The method of claim 1, further comprising administering a veterinary-acceptable carrier.
- 5 14. The method of claim 13, wherein said veterinary-acceptable carrier is combined with the live cells of *Campylobacter* prior to *in ovo* administration.
15. The method of claim 13, wherein said veterinary-acceptable carrier is administered to the bird in feed or water, or by aerosol spray, at any time after hatching.
- 10 16. The method of claim 14 or 15, wherein said veterinary-acceptable carrier is an adjuvant.
17. The method of claim 14 or 15, wherein said adjuvant has an immune-stimulating activity.
- 15 18. The method of claim 1, wherein live cells of *Campylobacter* are combined with at least one other immunogen selected from a viral, a bacterial or a protozoan immunogen.
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